

ABSTRACT

A multi-user detector for use in a CDMA receiver system includes a channel tap interpolator to generate interpolated channel taps for users of interest. The interpolated channel taps occur at integer multiples of a chip period from a sampling reference point. The channel tap interpolation allows detection processing to proceed in the chip domain, rather than in the sample domain, thus reducing the complexity of the multi-user solution significantly. In at least one approach, a number of low dimensionality "virtual" users are defined based on the recursive property of the spreading sequences. Solutions may then be developed for the virtual users using conventional detection (e.g., MMSE) techniques.

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